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1 Mulit-level system integration based on AUTOSAR

Ulrich Freund
May 2008   ICSE '08: Proceedings of the 30th international conference on Software engineering
Publisher: ACM
Full text available: 📄 pdf(121.01 KB)   Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Citation Count: 0

The design of distributed embedded real-time system is a challenging task. Besides solving the control-engineering issues, one has to consider real-time scheduling, reliability and production requirements w.r.t. production cost of the electronic control ...

Keywords: automatic code-generation, automotive, embedded software, rapid prototyping

2 Performance analysis of FlexRay-based ECU networks

Andrei Hagiescu, Unmesh D. Bordoloi, Samarjit Chakraborty, Prahladavaradan Sampath, P. Vignesh
V. Ganesan, S. Ramesh
June 2007   DAC '07: Proceedings of the 44th annual conference on Design automation
Publisher: ACM
Full text available: 📄 pdf(385.20 KB)   Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 8, Downloads (12 Months): 111, Citation Count: 0

It is now widely believed that FlexRay will emerge as the predominant protocol for in-vehicle automotive communication systems. As a result, there has been a lot of recent interest in timing and predictability analysis techniques that are specifically ...

Keywords: FlexRay, automotive electronics, bus protocols

3 Automotive electronics system, software, and local area network

Yoshimi Furukawa, Seiji Kawamura
October 2006   CODES+ISSS '06: Proceedings of the 4th international conference on
                Hardware/software codesign and system synthesis
Publisher: ACM
Full text available: 📄 pdf(217.84 KB)   Additional Information: full citation, abstract, index terms

Bibliometrics: Downloads (6 Weeks): 18, Downloads (12 Months): 80, Citation Count: 0

In this tutorial, an overview of automotive electronic systems and details of the development methodologies are presented. Automobiles were born to enhance human mobile performance. In early development stage, automotive engineers focused to strengthen ...

Keywords: automotive electronics

4 Quasi-Static Scheduling for Real-Time Systems with Hard and Soft Tasks
   Luis Alejandro Cortés, Petru Eles, Zebo Peng
   February 2004 DATE '04: Proceedings of the conference on Design, automation and test in
              Europe - Volume 2, Volume 2
   Publisher: IEEE Computer Society
   Full text available: 📄 pdf(265.55 KB)   Additional Information: full citation, abstract, references, index terms

   Bibliometrics: Downloads (6 Weeks): 7, Downloads (12 Months): 41, Citation Count: 0
       This paper addresses the problem of scheduling for realtime systems that include both hard and
       soft tasks. The relative importance of soft tasks and how the quality of results is affected when
       missing a soft deadline are captured by utility functions ...

5 SystemC-AMS Requirements, Design Objectives and Rationale
   Alain Vachoux, Christoph Grimm, Karsten Einwich
   March 2003 DATE '03: Proceedings of the conference on Design, Automation and Test in
              Europe - Volume 1, Volume 1
   Publisher: IEEE Computer Society
   Full text available: 📄 pdf(128.51 KB) 🖥 Publisher Site   Additional Information: full citation, abstract, references, cited by,
                                                                              index terms

   Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 26, Citation Count: 7
       This paper presents and discusses the foundations on which the analog and mixed-signal
       extensions of SystemC, named SystemC-AMS, will be developed. First, requirements from
       targeted application domains are identified. These are then used to derive design ...

6 Conducting forensic investigations of cyber attacks on automobile in-vehicle networks
   Dennis K. Nilsson, Ulf E. Larson
   January 2008 e-Forensics '08: Proceedings of the 1st international conference on Forensic
              applications and techniques in telecommunications, information, and multimedia and
              workshop
   Publisher: ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering)
   Full text available: 📄 pdf(345.47 KB)   Additional Information: full citation, abstract, references, index terms

   Bibliometrics: Downloads (6 Weeks): 1, Downloads (12 Months): 1, Citation Count: 0
       The introduction of the wireless gateway as an entry point to an automobile in-vehicle network
       reduces the effort of performing diagnostics and firmware updates considerably. Unfortunately,
       the same gateway also allows cyber attacks to target the unprotected ...

       Keywords: data, forensics, in-vehicle, in-vehicle network forensics, investigation, network,
       requirements, vehicle

7 Computer-aided architecture design & optimized implementation of distributed automotive
◆ EE systems
   Antal Rajnak, Ajay Kumar
   June 2007 DAC '07: Proceedings of the 44th annual conference on Design automation
   Publisher: ACM
   Full text available: 📄 pdf(405.03 KB)   Additional Information: full citation, abstract, references, index terms

   Bibliometrics: Downloads (6 Weeks): 6, Downloads (12 Months): 73, Citation Count: 0
       Complexity of Automotive EE systems has grown exponentially during the past decade. Model-
       based function design and simulation are widely accepted and used by the Automotive EE
       community of today, to face some of the challenges. Emerging new standards ...

       Keywords: AUTOSAR, CAN, LIN, scheduling, system-level design

8 Software Systems Engineering with Model-Based Design
Christopher Davey, Jon Friedman
May 2007 SEAS '07: Proceedings of the 4th International Workshop on Software Engineering for Automotive Systems
Publisher: IEEE Computer Society
Full text available: pdf(284.44 KB)   Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 13, Downloads (12 Months): 252, Citation Count: 0

Today's original equipment manufacturers (OEMs) and suppliers face the seemingly conflicting goals of reducing development time while improving quality, and reducing system complexity while delivering technical innovations. To meet these challenges, …

9 Models for model's sake: why explicit system models are also an end to themselves.
Oliver Niggemann, Joachim Stroop
May 2008 ICSE '08: Proceedings of the 30th international conference on Software engineering
Publisher: ACM
Full text available: pdf(1.37 MB)   Additional Information: full citation, abstract, references, index terms

Bibliometrics: Downloads (6 Weeks): 0, Downloads (12 Months): 0, Citation Count: 0

In automotive software and system design, explicit system and especially software models have only recently found their way into the development process. This paper will try to give an overview for what such models have so-far been used and which advantages …

Keywords: automotive software engineering, autosar, model-based development, software architecture, system engineering, tooling, uml

10 Specification and design of electronic control units
J. Bortolazzi, T. Hirth, T. Raith
September 1996 EURO-DAC '96/ EURO-VHDL '96: Proceedings of the conference on European design automation
Publisher: IEEE Computer Society Press
Full text available: pdf(135.86 KB)   Additional Information: full citation, references, index terms

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 82, Citation Count: 0

11 Formal Methods for Integration of Automotive Software
Marek Jersak, Kai Richter, Rolf Ernst, Jorn-Christian Braam, Zheng-Yu Jiang, Fabian Wolf
March 2003 DATE '03: Proceedings of the conference on Design, Automation and Test in Europe: Designers' Forum - Volume 2, Volume 2
Publisher: IEEE Computer Society
Full text available: pdf(136.13 KB) Publisher Site   Additional Information: full citation, abstract, references, cited by, index terms

Bibliometrics: Downloads (6 Weeks): 3, Downloads (12 Months): 45, Citation Count: 2

Novel functionality, configurability and higher efficiency in automotive systems require sophisticated embedded software, as well as distributed software development between manufacturers and control unit suppliers. However, at least for engine control …

12 On wheels, nuts and software
Michael Ellims
October 2004 SCS '04: Proceedings of the 9th Australian workshop on Safety critical systems and software - Volume 47, Volume 47
Publisher: Australian Computer Society, Inc.
Full text available: pdf(277.86 KB)   Additional Information: full citation, abstract, references, index terms

In this paper I examine the issue of whether we can trust software systems and put forward an argument that in an absolute sense the answer must necessarily be no for a multitude of reasons. The paper then examines the question of whether this is an ...

Keywords: limits, requirements, safety, systems

13 Business situation reflected in automotive electronic architectures: analysis of four commercial cases

Joakim Fröberg, Kristian Sandström, Christer Norström
May 2005 SEAS '05: Proceedings of the second international workshop on Software engineering for automotive systems
Publisher: ACM
Full text available: pdf(73.79 KB) Additional Information: full citation, abstract, references, index terms

Automotive vehicle electronic systems are developed facing a complex and large set of inter-related requirements from numerous stakeholders, many of which are internal to the Original Equipment Manufacturer, OEM. The electronic architecture, of the product, ...

Keywords: automotive, case-study, electronic architecture, requirements

14 Business situation reflected in automotive electronic architectures: analysis of four commercial cases

Joakim Fröberg, Kristian Sandström, Christer Norström
July 2005 ACM SIGSOFT Software Engineering Notes, Volume 30 Issue 4
Publisher: ACM
Full text available: pdf(73.79 KB) Additional Information: full citation, abstract, references, index terms

Automotive vehicle electronic systems are developed facing a complex and large set of inter-related requirements from numerous stakeholders, many of which are internal to the Original Equipment Manufacturer, OEM. The electronic architecture, of the product, ...

Keywords: automotive, case-study, electronic architecture, requirements

15 Assessing the effect of failure severity, coincident failures and usage-profiles on the reliability of embedded control systems

Frederick T. Sheldon, Kshamta Jerath
March 2004 SAC '04: Proceedings of the 2004 ACM symposium on Applied computing
Publisher: ACM
Full text available: pdf(327.91 KB) Additional Information: full citation, abstract, references

The increasingly ubiquitous use of embedded systems to manage and control our technologically (ever-increasing) complex lives makes us more vulnerable than ever before. Knowing how reliable such systems are is absolutely necessary especially for safety, ...

Keywords: design, measurement, performance, reliability

16 Software Engineering for Automotive Systems: A Roadmap

Alexander Pretschner, Manfred Broy, Ingolf H. Kruger, Thomas Stauner
May 2007 FOSE '07: 2007 Future of Software Engineering
Publisher: IEEE Computer Society
Full text available: pdf(896.23 KB) Additional Information: full citation, abstract, references, cited by, index terms

The first pieces of software were introduced into cars in 1976. By 2010, premium class vehicles are expected to contain one gigabyte of on-board software. We present research challenges in the domain of automotive software engineering.

17 Self-adaptive ant colony optimisation applied to function allocation in vehicle networks
Manuel Förster, Bettina Bickel, Bernd Hardung, Gabriella Kókai
July 2007   GECCO '07: Proceedings of the 9th annual conference on Genetic and evolutionary
             computation
Publisher: ACM
Full text available: pdf(204.61 KB)   Additional Information: full citation, abstract, references, index terms

Modern vehicles possess an increasing number of softwareand hardware components that are integrated in electroniccontrol units (ECUs). Finding an optimal allocation forall components is a multi-objective optimisation problem,since every valid allocation ...

Keywords: ant colony optimization, automobile industry, multi-objective optimisation, self-adaptation

18 Methods and tools for systems engineering of automotive electronic architectures
Jakob Axelsson
March 2001 DATE '01: Proceedings of the conference on Design, automation and test in Europe
Publisher: IEEE Press
Full text available: pdf(31.33 KB)   Additional Information: full citation, index terms

19 Making Decisions in Integration of Automotive Software and Electronics: A Method Based
on ATAM and AHP
Peter Wallin, Joakim Froberg, Jakob Axelsson
May 2007   SEAS '07: Proceedings of the 4th International Workshop on Software Engineering for
            Automotive Systems
Publisher: IEEE Computer Society
Full text available: pdf(165.89 KB)   Additional Information: full citation, abstract, references, index terms

In this paper we present a new method for making decisions on integration strategy for in-vehicle automotive systems. We describe the problem of choosing integration strategy and we describe the method, which is a combination of the Architecture Tradeoff ...

20 A universal communication model for an automotive system integration platform
T. Demmeler, P. Giusto
March 2001 DATE '01: Proceedings of the conference on Design, automation and test in Europe
Publisher: IEEE Press
Full text available: pdf(308.97 KB)   Additional Information: full citation, references, cited by, index terms

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